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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte IEYASU KOBAYASHI, MITSUO TOJO, TSUYONARI NOHIRA, SHINJI MURO and HIROFUMI MUROOKA

Appeal 2009-0473
Application 09/914,033
Technology Center 3600

Decided: April 30, 2009

Before WILLIAM F. PATE, III, STEVEN D.A. McCARTHY, and STEFAN STAICOVICI *Administrative Patent Judges*.

STAICOVICI, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Ieyasu Kobayashi et al. (Appellants) appeal under 35 U.S.C. § 134 from the Examiner's decision rejecting claims 1-24. The Appellants' representative presented oral argument on April 21, 2009. We have jurisdiction over this appeal under 35 U.S.C. § 6 (2002).

THE INVENTION

The Appellants' invention is drawn toward a polyester film roll. The film roll has a difference R between the maximum diameter and the minimum diameter of not more than $2W \times 10^{-3}$ and not more than $L \times 10^{-7}$, where W is the width of the film roll; L is the length of the rolled film; and the maximum and minimum diameters are measured in separate parallel planes intersecting an axis extending along a width dimension of the roll. Specification 2, ll. 12-19 (as amended Oct. 14, 2003) and fig. 2.

Claims 1 and 16 are representative of the claimed invention and read as follows:

> 1. A polyester film roll in which a polyester film is rolled on a core, said polyester film roll having a maximum diameter and a minimum diameter when all diameters of said roll are measured along the width direction of the roll, and the difference R between the maximum diameter value and the minimum diameter value is not more than $2W \times 10^{-3}$ and not more than $L \times 10^{-7}$, wherein W is the width of the film roll, and L is the length of the rolled film.
>
> 16. A polyester film roll in which a polyester film is rolled on a core, said polyester film roll having a plurality of diameters obtained from measurements along the width direction of the roll, said plurality of diameters being represented by a curved line having two ends, said

> plurality of diameters comprising a maximum diameter and a minimum diameter, said maximum diameter being represented by a first maximum perpendicular line length which is determined by a straight line drawn connecting both ends of the curved line, and a first perpendicular line with respect to said straight line drawn from the maximum convex area of said curved line to said straight line, said minimum diameter being represented by a second maximum perpendicular line length which is determined by a second perpendicular line with respect to said straight line drawn from the maximum concave area of said curved line to said straight line, wherein the first maximum perpendicular line length is not more than 500 μm, and the second maximum perpendicular line length is not more than 300 μm.

THE REJECTIONS

The Examiner relies upon the following as evidence of unpatentability:

Sasaki	US 4,576,344	Mar. 18, 1986

The following rejections are before us for review:

The Examiner rejected claims 1-3 and 16-18 under 35 U.S.C. § 102(b) as anticipated by Sasaki.

The Examiner rejected claims 4-15 and 19-24 under 35 U.S.C. § 103(a) as unpatentable over Sasaki.

THE ISSUE

Have the Appellants demonstrated that the Examiner erred in determining that Sasaki teaches a polyester film roll having dimensions based on limiting the difference between the maximum diameter and the

minimum diameter of the film roll according to the relationships of claims 1 and 16?

SUMMARY OF DECISION

We REVERSE and ENTER NEW GROUNDS OF REJECTION PURSUANT TO OUR AUTHORITY UNDER 37 C.F.R. § 41.50(b).

FINDINGS OF FACT

The following enumerated findings of facts (FF) are supported by at least a preponderance of the evidence. *Ethicon, Inc. v. Quigg*, 849 F.2d 1422, 1427 (Fed. Cir. 1988) (explaining the general evidentiary standard for proceedings before the Office).

1. The Appellants' polyester film roll is free from wrinkles and is used for magnetic tape. Specification 1, ll. 7 and 12.
2. The rolling hardness of the Appellants' polyester film roll is preferably not less than 90 and not more than 100 to prevent the generation of wrinkles with the passage of time. Specification 5, ll. 2-7.
3. The length of the Appellants' polyester film is generally 3,000 m to 30,000 m. Specification 5, ll. 8-10.
4. The width of the of the Appellants' polyester film is generally 0.3 m (300 mm) to 1.5 m (1,500 mm). Specification 5, ll. 8-10.
5. The thickness of the of the Appellants' polyester film is preferably not less than 0.5 μm and not more than 20 μm. Specification 5, ll. 13-14.

6. The surface roughness Ra[1] of the of the Appellants' polyester film is preferably not less than 0.1 nm (0.0001 μm) and not more than 10nm (0.01 μm). Specification 5, ll. 19-20. The Appellants do not state that the upper limit of the surface roughness is critical to forming a roll having minimum and maximum diameters sufficiently close to meet the limitations of claims 1 and 16. Instead, the Appellants exclude coarse polyester films since a film having an Ra of more than 0.01 μm "scarcely generates wrinkles, even when the shape of the roll does not satisfy the conditions of the conditions of the present invention." Specification 5, ll. 25-29.

7. Sasaki teaches a wrinkle free polyester film roll used as a base film roll for magnetic tape or metallized film. Sasaki, col. 8, ll. 55-57.

8. Sasaki further teaches that the wrinkle free polyester film roll is obtained by adjusting the hardness of the film roll and the centerline average surface roughness of the polyester film to satisfy a given relationship between them. Sasaki, col. 3, ll. 47-51 and col. 7, ll. 14-25.

9. Sasaki discloses a first working example consisting of a roll of film comprising polyethylene terephthalate (PET) having a thickness of 8 μm and a centerline surface average roughness Ra of 0.04 μm. Sasaki, col. 8, ll. 62-68.

10. The length of the polyester film of the first working example of Sasaki is 6,000 m. Sasaki, col. 9, ll. 3.

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[1] The surface roughness Ra of the Appellants' polyester film is determined as the average of four measurements of the centerline average surface roughness of the film. Specification 12, ll. 1-7.

11. The width of the polyester film of the first working example of Sasaki is 650 mm. Sasaki, col. 9, ll. 1.

12. The roll of polyester film of the first working example of Sasaki had a roll hardness of 98 degrees. Sasaki, col. 9, l. 8. The roll did not wrinkle after seven days under controlled conditions. Sasaki, col. 9, ll. 10-11.

13. Sasaki discloses a second working example consisting of a roll of polyester film having a thickness of 10 μm and a centerline surface average roughness of 0.025 μm. Sasaki, col. 9, l. 23-24.

14. The length of the polyester film of the second working example of Sasaki is 5,000 m. Sasaki, col. 9, l. 27.

15. The width of the polyester film of the second working example of Sasaki is 650 mm. Sasaki, col. 9, ll. 26.

16. The roll of polyester film of the second working example of Sasaki had a roll hardness of 96 degrees. Sasaki, col. 9, l. 33.

17. Table 1 of Sasaki discloses examples of rolls of film comprising PET having thicknesses of 10 μm and centerline surface average roughnesses of 0.01 μm and 0.001 μm. These rolls had roll hardnesses of 95 and 97 degrees, respectively. Sasaki, col. 7, ll. 1-9; *see also* col. 6, ll. 47-48.

18. A person of ordinary skill in the art would readily recognize that a manufactured cylindrical object will always have some deformities and not be perfectly cylindrical, such that the difference between the maximum diameter and the minimum diameter will not be zero.

PRINCIPLES OF LAW

Burden of Proof

The USPTO has the initial burden of providing a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic reasonably flows from the teachings of the applied prior art. *See In re King*, 801 F.2d 1324, 1327 (Fed. Cir. 1986). Once the USPTO establishes a prima facie case of anticipation based on inherency, the burden shifts to the applicant to prove that the prior art does not possess the characteristic at issue. *See Id.* This is the case whether the rejection is based on inherency under 35 U.S.C. § 102, prima facie obviousness under 35 U.S.C. § 103, or both jointly or alternatively. *See In re Best*, 562 F.2d 1252, 1255 (CCPA 1977).

Anticipation

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros., Inc. v. Union Oil Co. of California,* 814 F.2d 628, 631 (Fed. Cir. 1987).

Obviousness

It is elementary that to support an obviousness rejection "[a]ll words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385 (CCPA 1970).

OPINION

The anticipation rejection over Sasaki

The Appellants argue that Sasaki does not teach a polyester film roll having dimensions based on limiting the maximum diameter and the minimum diameter of the film roll according to the relationships of claims 1 and 16. App. Br. 5. In response, the Examiner takes the position that because the polyester film of Sasaki is wrinkle free, the film roll has a "uniform diameter along its width," and as such the "difference between the maximum and minimum diameters equals zero." Ans. 4-5. Therefore, according to the Examiner, the teachings of Sasaki satisfy the claimed upper limits on the difference between the maximum diameter and the minimum diameter of the rolled film because zero will always be lower than the claimed upper limits. See Ans. 5.

We find the Examiner's position untenable for the following reasons. Sasaki teaches a wrinkle free polyester film roll. FF 7. Sasaki further teaches that the wrinkle free polyester film roll is obtained by adjusting the hardness of the film roll and the centerline average surface roughness of the polyester film to satisfy a given relationship between them. FF 8. However, we could not find any teachings in Sasaki, and the Examiner has not pointed to any teachings in Sasaki, that would suggest to a person of ordinary skill in the art that the film roll of Sasaki has dimensions based on limiting the difference between the maximum diameter and the minimum diameter of the film roll according to the relationships of claims 1 and 16. Moreover, Sasaki fails to recognize any relationship between the diameter of the polyester film roll, the length of the rolled film, and the width of the film roll. Hence, we agree with the Appellants that in contrast to the claimed invention in Sasaki

> the prevention of the formation of wrinkles comprises controlling the roll hardness (H) of the film roll to a value satisfying the relationship $H \geq 0.67x^3-10.61x^2+55.54x-1.16$ wherein x=In (1/Ra). Such a relationship is completely distinguishable from that of the present invention.

App. Br. 7.

Further, we could not find any teachings in Sasaki that would imply to a person of ordinary skill in the art that the film roll of Sasaki has a uniform diameter along its width such that the difference between the maximum diameter and the minimum diameter is zero. A person of ordinary skill in the art would readily recognize that a manufactured cylindrical object will always have some deformities and not be perfectly cylindrical, such that the difference between the maximum diameter and the minimum diameter will not be zero. FF 18. Furthermore, the Examiner takes the position that "[i]t is well known in the art, and intuitively apparent, that a wrinkle free [film] roll would have a uniform diameter along its width." Ans. 5. However, the Examiner fails to provide any evidence or reasoning sufficient to support even a prima facie finding that the wrinkle free roll film of Sasaki necessarily has a uniform diameter along its width.

Inasmuch as we found that Sasaki does not teach a polyester film roll having dimensions based on limiting the maximum diameter and the minimum diameter of the film roll as required by claims 1 and 16, Sasaki does not teach all the elements of independent claims 1 and 16. Accordingly, the rejection of claims 1-3 and 16-18 under 35 U.S.C. § 102(b) as anticipated by Sasaki cannot be sustained.

The obviousness rejection over Sasaki

Claims 4-15 and 19-24 are rejected as unpatentable over Sasaki. The Examiner has not articulated any reason why one having ordinary skill in the art would have been led to modify the film roll of Sasaki to have dimensions based on limiting the maximum diameter and the minimum diameter of the film roll. Accordingly, the rejection of claims 4-15 and 19-24 under 35 U.S.C. § 103(a) as unpatentable over Sasaki, is in error and will not be sustained.

NEW GROUNDS OF REJECTION

We make the following new grounds of rejection pursuant to 37 C.F.R. § 41.50(b).

Claims 1-5, 12, 16-22 and 24 are anticipated under 35 U.S.C. § 102(b) by Sasaki, or in the alternative, under 35 U.S.C. § 103(a) as unpatentable over Sasaki. As noted above, both the polyester film roll of Sasaki and that of the Appellants is wrinkle free. FF 1 and 7. The Appellants' polyester film has a length of 3,000 m to 30,000 m, a width of 0.3 m (300 mm) to 1.5 m (1,500 mm), and a thickness of 0.5 μm to 20 μm. FF 3-6. In turn, Sasaki teaches working examples of a polyester films having lengths of 6,000 m or 5,000 m, widths of 650 mm, and thicknesses of 8 μm or 10 μm. FF 9-11 and 13-15. Further, the rolling hardness of the Appellants' polyester film roll is preferably not less than 90 and not more than 100 to prevent the generation of wrinkles with the passage of time. FF 2. Similarly, Sasaki teaches that the polyester film rolls of the two working examples, which had roll hardnessses of 98 and 96, respectively, did not wrinkle. FF 12 and 16.

As such, the polyester film rolls of the two working examples of Sasaki have the same film length, width, thickness, and rolling hardness as the Appellants' polyester film roll. A person of ordinary skill in the art would have readily recognized that a manufactured cylindrical object will have some deformities and hence will have a maximum and a minimum diameter. FF 18. Moreover, the same person of ordinary skill in the art would have appreciated the desirability of limiting the difference between the maximum diameter and the minimum diameter of the cylindrical object in order to provide uniformity to the cylindrical object. Therefore, because the polyester film roll of Sasaki has the same film length, width, thickness, and rolling hardness as the Appellants' polyester film roll, and achieves the same result of a wrinkle free film, there exists a prima facie basis for finding that Sasaki's working examples necessarily have maximum and minimum diameters sufficiently close to meet the relationships of claims 1, 16 and 24.

The centerline surface average roughnesses of the polyester film rolls of Sasaki's two working examples are larger than the upper bound of the preferred range of surface roughness Ra taught by the Appellants. *See* FF 6, 9 and 12. The discrepancy in the surface roughnesses is not so large as to imply that Sasaki's working examples do not have maximum and minimum diameters sufficiently close to meet the relationships of claims 1, 16 and 24. The upper bound does not appear to be critical to forming a roll having sufficient uniformity of diameter to meet the claim limitations. *See* FF 6. Sasaki also teaches examples of rolls of polyester film having thicknesses of 10 μm and centerline surface average roughnesses of 0.01 μm and 0.001 μm, wound to roll hardnesses of 95 and 97 degrees, respectively. FF 17. Because each of these polyester film rolls taught by Sasaki have thickness,

surface roughness, and rolling hardness in the Appellants' preferred range, and achieve the same result of a wrinkle free film, there exists a prima facie basis for finding that these rolls also necessarily have maximum and minimum diameters sufficiently close to meet the relationships of claims 1, 16 and 24.

In the alternative, however, even assuming *arguendo* that the polyester film rolls of Sasaki might not necessarily have maximum and minimum diameters sufficiently close to meet the relationships of claims 1, 16 and 24, we conclude that it would have been obvious for a person of ordinary skill in the art to improve the polyester film roll of Sasaki by controlling the maximum diameter and the minimum diameter of the film rolls to meet the relationships of claims 1, 16 and 24. One of ordinary skill in the art would have had a design incentive to optimize the uniformity of the cylindrical film rolls of Sasaki. The Appellants have not alleged that the proposed improvement would have been beyond the level of ordinary skill in the art or that the improvement would have produced results which one of ordinary skill in the art could not have predicted.

For the above reasons, we conclude that the teachings of Sasaki reasonably support a polyester film roll having dimensions based on limiting the maximum diameter and the minimum diameter of the film roll according to the relationships of claims 1, 16 and 24, so as to shift the burden to the Appellants to show that this is not the case. Although the reasoning which led the Examiner to reject claims 1and 16 under 35 U.S.C. § 102(b) as anticipated by Sasaki was erroneous, the Examiner did suggest to the Appellants during prosecution that the Appellants should provide factual evidence, such as test results, as to why Sasaki does not meet claims 1 and

16. Final Rejection 4 (mailed Aug. 10, 2004). The Examiner correctly informed the Appellants that mere allegations that the claim is not met are insufficient to meet such a burden absent factual evidence. *Id.* The Appellants have brought no such evidence to our attention in this appeal. *See* App. Br. 8. The evidence of record in this appeal, considered as a whole, supports a finding that Sasaki anticipates claims 1, 16, and 24 or, in the alternative, a conclusion that the subject matter of those claims would have been obvious from the teachings of Sasaki.

With respect to claims 2, 3, 5, 17, 18, and 21, at least one of the polyester film rolls of Sasaki's Table 1 contains PET, has a surface roughness of 0.001 μm (10 nm) and has a film thickness of 10 μm. FF 15. Regarding claims 4 and 19, the polyester film rolls of the two working examples of Sasaki have roll hardnesses of 96 and 97 degrees (FF 12 and 16). Sasaki further teaches polyester films having lengths of 5,000 m or 6,000 m and widths of 650 mm, as required by claim 20. FF 10, 11, 14 and 15. Finally, with respect to claims 12 and 22, Sasaki teaches a polyester film used as a base film for a magnetic tape FF 7.

In light of the above, we conclude that claims 1-5, 12, 16-22, and 24 are anticipated under 35 U.S.C. § 102(b) by Sasaki, or in the alternative, are unpatentable under 35 U.S.C. § 103(a) over Sasaki.

Although we decline to reject every claim under our discretionary authority under 37 C.F.R. § 41.50(b), we emphasize that our decision does not mean the remaining claims are patentable. Rather, we merely leave the patentability determination of these claims to the Examiner. *See* MPEP § 1213.02.

CONCLUSION

The Appellants have demonstrated that the Examiner erred in determining that Sasaki teaches a polyester film roll having dimensions based on limiting the maximum diameter and the minimum diameter of the film roll according to the relationships of claims 1 and 16.

We enter a new ground of rejection of claims 1-5, 12, 16-22, and 24 under 35 U.S.C. § 102(b) as anticipated by Sasaki, or in the alternative, under 35 U.S.C. § 103(a) as unpatentable over Sasaki.

DECISION

The decision of the Examiner to reject claims 1-24 is reversed.

We enter new grounds of rejection of claims 1-5, 12, 16-22, and 24.

This decision contains new grounds of rejection pursuant to 37 C.F.R. § 41.50(b). 37 C.F.R. § 41.50(b) provides "[a] new ground of rejection pursuant to this paragraph shall not be considered final for judicial review."

37 C.F.R. § 41.50(b) also provides that the appellant, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new grounds of rejection to avoid termination of the appeal as to the rejected claims:

> (1) Reopen prosecution. Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the proceeding will be remanded to the examiner. . . .
>
> (2) Request rehearing. Request that the proceeding be reheard under § 41.52 by the Board upon the same record. . . .

The two-month time period for exercising one of the options provided in 37 C.F.R. § 41.50(b) begins to run from the Decided Date shown on the first page of the decision. The time period does not run from the Mail Date (paper delivery) or the Notification Date (electronic delivery).

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2007).

REVERSED; 37 C.F.R. § 41.50(b)

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